

Attorney Docket No: MLFE.P008C2

**PATENT****REMARKS**

By this response, claims 48-51 55-56, 58, and 64 have been amended, claims 72-79 have been deleted, and no new claims have been added. Hence, claims 48-71 remain currently pending.

1. **Response to Claim Rejections under 35 U.S.C. § 102**

Claims 48, 51-58, 61-65, 67, and 69-79 stand rejected under 35 U.S.C. § 102 (e) as being anticipated by U.S. Patent No. 4,368,740 (Binder). The Office Action states that Binder teaches an indirect calorimeter comprising a flow tube, a flow meter coupled to the flow tube, an oxygen sensor coupled to the flow tube and configured to generate an output associated with a concentration of oxygen in exhaled and inhaled gasses, a computation unit, a respiratory connector, and a display unit. By this Amendment, claim 48 has been amended to recite a

An indirect calorimeter, comprising:

- a mask configured to fit tightly around a portion of a subject's face;
- a flow tube housing fixably coupled to said mask through one or more mounting points on said mask;

- a U-shaped, removable flow tube disposed within said flow tube housing and having a first end coupled to said mask through a mouthpiece in said mask, an elongated measurement section and a second end that is open, the flow tube configured to pass inhaled gases and exhaled gases of a user, the flow tube having a substantially continuous internal diameter so that flow therethrough is substantially laminar;

- a flow meter integrally formed in said flow tube housing, said flow meter being configured to generate an output associated with a volume of said inhaled gases and a volume of said exhaled gases detected in the measurement section of the flow tube;

- an oxygen sensor coupled to said flow tube, said oxygen sensor being configured to generate an output associated with a concentration of oxygen in said exhaled gases; and
- a computation unit coupled to said flow meter and said oxygen sensor, said computation unit being configured to process said output of said flow meter and said output of said oxygen sensor to determine an amount of oxygen consumed by said subject.

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The Binder reference discloses only a pneumotach having a mouthpiece through which the subject breathes. Binder does not teach or suggest a calorimeter having a mask coupled to a removable flow-tube and disposed within a flow-tube housing that has an integral flow meter. To the extent that Binder shows the components of a pneumotach system, these components are illustrated as separate units. Binder does not teach or suggest a flow meter that is integrated within a flow tube housing that is coupled to a mask for fitting to the subject's face, nor does it teach or suggest the use of a removable and disposable flow-tube within the flow tube housing. The claimed elements allow the manufacture of a calorimeter that contains all of the essential elements within the mask and that does not require external connections. This facilitates use by a user during normal activity and increases user comfort during use, thus overcoming significant deficiencies in the prior art.

In view of the amendment to independent claim 48, it is respectfully submitted that claims that depend therefrom, namely claims 49-57, are similarly patentable under 35 U.S.C. 102.

Analogous amendments have been made to claims 58 -71, therefore, for the reasons provided above with respect to claim 48, it is respectfully submitted that these claims are not anticipated by the cited reference.

2. Response to Claim Rejections under 35 U.S.C. § 103

Claims 49, 50, 59, 60, 66, and 68 stand rejected under 35 U.S.C. § 103 (a) as being unpatentable over Binder and further in view of U.S. Patent No. 5,503,151 (Harmoncourt). The Office Action states that Binder does not teach an ultrasonic flow meter or fluorescence quench oxygen sensor, but that both these types of sensors are well known in the art. The Office Action further states that Harmoncourt teaches an apparatus comprising a respiratory tube, ultrasonic flow sensor, and a fluorescence quench oxygen sensor, and that therefore, it would have been obvious for one of ordinary skill in the art to modify Binder in light of Harmoncourt.

In light of the amendments made to independent claims 48, 58, and 64, and the lack of any teaching or suggestion in Harmoncourt that describes a calorimeter that includes a removable flow tube coupled to a mask, a flow tube housing encasing the flow tube and

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including an integral flow sensor, it is respectfully submitted that the cited combination does not render the amended claims unpatentable.

In light of the fact that claims 72-29 have been cancelled, it is respectfully submitted that the instant rejection of these claims under 35 U.S.C. 102 and/or 35 U.S.C. 103 has been rendered moot.

Applicants respectfully request that the remarks be considered and made part of the official record in the present application, and submit that support for the claim amendments is provided in the specification, figures, and claims as originally filed.

If there are any shortages, the Examiner is authorized to charge our Deposit Account Number 503616.

Respectfully submitted,

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